



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE

United States Patent and Trademark Office

Address: COMMISSIONER FOR PATENTS

P.O. Box 1450

Alexandria, Virginia 22313-1450

www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/811,788	03/29/2004	Michael E. Rivir	12920/507125	9488
<div>7590 10/27/2009 FROST BROWN TODD LLC 2200 PNC Center 201 E. Fifth Street Cincinnati, OH 45202-4182</div>				
EXAMINER				
THOMAS, DAVID B				
ART UNIT		PAPER NUMBER		
3723				
MAIL DATE		DELIVERY MODE		
10/27/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/811,788

**Applicant(s)**

RIVIR ET AL.

**Examiner**

David B. Thomas

**Art Unit**

3723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 October 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15, 17-19, 21-23, 25, 26 and 28-38 is/are pending in the application.
- 4a) Of the above claim(s) 29-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15, 17-19, 21-23, 25 and 26 is/are rejected.
- 7) ☒ Claim(s) 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Terminal Disclaimer*

1. The terminal disclaimer filed on 28 July 2008 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent Nos. 6,524,172 and 6,726,549, has been reviewed and is accepted. The terminal disclaimer has been recorded.

### *Claim Objections*

2. Claim 19 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claim 19 provides, inter alia, that the particles "are cryogenic particles" which in one sense limits the type of particles which are received by the hopper, however, ***the claim fails to provide any structural features to further limit the structural features of the particle blast apparatus*** of claim 15. Furthermore, "[i]nclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." *In re Young*, 75 F.2d 996, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 USPQ 458, 459 (CCPA 1963)).

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 25 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

5. Claims 25 and 26 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. Claim 25 recites, *inter alia*, "further comprising a vibrator"; however, the claim fails to positively provide the cooperative structural relationship between the "vibrator" and the hopper of claim 15 or 19.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. The examiner notes that the recitation "*a particle blast apparatus*" has not been given patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure (i.e. a hopper) and the portion of the

claim following the preamble is a self-contained description of the structure not depending for completeness but, instead, the process steps or structural limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951). The examiner further notes that the functional recitations "*for introduction into a flow of transport gas*" (claim 15) and "*to introduce said particles into the flow of transport gas*" (Claim 19) have not been given patentable weight because they are narrative in form. In order to be given patentable weight, a functional recitation must be expressed as a "means for" performing the specified function, as set forth in 35 USC § 112, 6<sup>th</sup> paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional language.

8. Claims 15, 17, and 21-23 are rejected under 35 U.S.C. 102(e) as being anticipated by MacMichael et al. (6,987,228).

MacMichael et al. disclose an apparatus including **a hopper 31 for receiving particles 32**; and **an impulse assembly 41** configured to impart energy to the hopper, **the impulse assembly carried by the hopper**. The impulse assembly comprises at least one member which is reciprocated between first and second positions; wherein said at least one member reciprocates along a linear axis; wherein said **axis is horizontal** (see Fig. 4; Col. 10, lines 59-64; and, Col. 12, lines 17-59). MacMichael et al. further discuss that "the hopper 31 is connected to rod 120 by a clamp 230. This clamp usually ensures that the hopper cannot move relative to the rod 120. It has been found, however, that beneficial effects can be obtained when the **clamp 230 is not**

**used so that the hopper merely sits in hole 242** and is able to be perturbed vertically (i.e., the “hopper not being rigidly supported by said frame”). This clamp-free configuration has been found to be particularly effective when it is desired to dispense particles which tend to adhere to one another or to the hopper or sieve. For example, agarose beads tend to display stickiness which often prevents them from being dispensed at all. If the clamp is not used and the hopper 31 is free to move vertically (and/or to rotate) in the aperture 242, agarose beads may be dispensed. The reason for this is thought to be that **the actuator 41 provides a horizontal force** which is converted in part to a vertical force at the hopper side walls, possibly due to the tapered nature of these side walls. This vertical force causes the hopper to vibrate vertically, which serves to fluidise the agarose beads, making them easier to dispense. This configuration has the further advantage that the hopper 31 is free to rotate in the aperture 242 and in general, the hopper 31 rotates when the rod 120 is mechanically activated by the actuator 41. These rotations are thought to be due to asymmetries in the components, for example when the plane of the aperture 242 is not precisely horizontal. This rotation of the hopper 31 serves to provide that the actuation force is applied from a slightly different direction on each actuation such that each tap occurs at a different point on the hopper circumference. This helps to prevent the particles from becoming compressed or otherwise stuck together” **[emphasis added]** (Col. 23, lines 41-67 and Col. 24, lines 1-3).

9. Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by Kastner (3,580,433).

Kastner discloses, *inter alia*, that **a hopper 1** may include **a vibrator 25** which is **carried by the hopper**, or alternatively a rotating eccentric wheel or gear (not shown) could be positioned adjacent one of both sides of the hopper **to impart vibration or impulse** to the hopper (Col. 4, lines 58-64).

10. Claims 15, 17, 18, and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Abbott (5,618,177).

Abbott discloses, *inter alia*, **a hopper 50 not rigidly supported 52 by a frame 54** and an **"impulse assembly" 72** carried by the hopper, via plate 74, adjacent the exit 66 of the hopper. The "impulse assembly" 72 may be vibrator in the form of an electric motor having an eccentric weight or cam 76 mounted on its shaft, and is **preferably horizontal and off the vertical axis of the funnel...**the vibrator may be implemented using other devices such as **solenoids** (which is inherently an impulse assembly, see MacMichael et al. *supra*), piezoelectric vibrators, and pneumatic vibrators...and, in the case of piezoelectric devices as the vibrator, these **may be attached directly to or near the bottom of funnel 50** (Col. 5, lines 1-21).

11. Claims 15, 17, and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Johnston (5,305,912).

Johnston discloses, *inter alia*, "Material is received into a **cushioning hopper**, attached to the for rotation therewith so that it will fall therefrom by gravity first onto the apex of the cone and then down the cone surface to form the angle of repose for such material and establish a toe point on said flange where it comes to rest when the cone is stationary. Overflow from the **cushioning hopper** enters a concentrically larger

surge hopper, also attached to the cone for rotation therewith, in spaced relationship above the base flange to form a flow passageway where such overflow joins the material flowing from the cushioning hopper down the cone surface to the angle of repose. Rotation of the cone at a relative slow speed creates a sufficient centrifugal ***impulse at the base flange...***" (Col. 1, lines 60-68 and Col. 2, lines 1-13).

### ***Response to Arguments***

12. Applicant's arguments, see pp. 2-5 of the Remarks filed 20 October 2009, with respect to the statutory type (35 U.S.C. 101) double patenting rejection have been fully considered and are persuasive. The rejection of claims 15, 17, and 19 on these grounds has been withdrawn.

13. Regarding the terminal disclaimer, see pp. 5 and 6 of the remarks, the examiner has forwarded the arguments to the attention of the appropriate channels, and the terminal disclaimer has now been reviewed and accepted, see paragraph 1 *supra*.

### ***Allowable Subject Matter***

14. The indicated allowability of claims 25 and 26 is withdrawn based upon the rejection of the claims under 35 U.S.C. § 112, 2<sup>nd</sup> paragraph, as being indefinite.

15. Claim 28 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter: It is the examiner's opinion that the art of record considered as a whole, alone or in combination, neither anticipates nor renders obvious, *inter alia*, a hopper having



***both an impulse assembly which is carried by the hopper and a vibrator which is carried by the hopper***, together in combination with the rest of the limitations in the independent claim.

### ***Conclusion***

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Foster ('332) discloses a process and system for producing pellets of high density carbon dioxide or other gases (cryogenic particles?) having, *inter alia*, hoppers 43,46 where a vibrator 37 is mounted on the bottom of the hoppers to facilitate the removal of pellets therefrom. Moreland ('324) discloses, *inter alia*, a hopper 20 having a vibrator 38 directly mounted thereto. Westphal ('339) discloses, *inter alia*, a hopper 15 having impulse vibrators 98 carried by the hopper 15.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David B. Thomas whose telephone number is (571) 272-4497. The examiner's e-mail address is: [dave.thomas@uspto.gov](mailto:dave.thomas@uspto.gov). The examiner can normally be reached on Mon-Fri 10am-7pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph J. Hail can be reached on (571) 272-4485. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David B. Thomas/  
Primary Examiner, Art Unit 3723

/DBT/